REMARKS

This is a reply to the Office Action dated January 15, 2008, in the above-referenced patent application. Applicant thanks the Examiner for carefully considering the application. Applicant notes that the included figures herein are only used for facilitating the remarks below and are not intended to replace or add to Applicant's figures.

Status of Claims

Before this response, claims 1-4, 8-10, 15 and 17 were, and remain pending. Claims 1, 23, 35 and 36 are independent.

Claims 1-4, 8-10, 15 and 17 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,594,508 issued to Ketonen and U.S. Patent No. 6,298,243 issued to Basile, and further in view of U.S. Patent No. 5,421,030 issued to Baran.

Rejections under 35 U.S.C. § 103

Rejection of claims 1-4, 8-10, 15 and 17 under 35 U.S.C. 103 as being unpatentable over Ketonen and Basile in further view of Baran is respectfully traversed because for at least the following reasons, Ketonen, Basile and Baran, whether considered separately or in combination, fail to show or suggest all of the claimed limitations.

According to MPEP §2142

> [t]he key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. The Supreme Court in *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___, ___, 82 USPQ2d 1385, 1396 (2007) noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Federal Circuit has stated that 'rejections on obviousness cannot be sustained with mere conclusory statements; instead there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.' *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006). See also *KSR*, 550 U.S. at __, 82 USPQ2d at 1396 (quoting Federal Circuit statement with approval).

Further, according to MPEP §2143, "[T]he Supreme Court in *KSR International Co. v. Teleflex, Inc.* 550 U.S. ___, ___, 82 USPQ2d 1395-1397 (2007) identified a number of rationales to

support a conclusion of obviousness which are consistent with the proper "functional approach" to the determination of obviousness as laid down in *Graham*." And, according to MPEP §2143.01, [o]bviousness can be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so. *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1335 (Fed. Cir. 2006). Further, "[t]he mere fact that references can be combined or modified does not render the resultant combination obvious unless the results would have been predictable to one of ordinary skill in the art." *KSR International Co. v. Teleflex, Inc.* 550 U.S. ___, ___, 82 USPQ2d 1385, 1396 (2007). Additionally, according to MPEP §2143

> [a] statement that modification of the prior art to meet the claimed invention would have been "well within the ordinary skill of the art at the time the claimed invention was made" because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish *prima facie* case of obviousness without some objective reason to combine the teachings of the references. *Ex parte Levengood*, 28 USPQ2d 1300 (Pat. App. & Inter. 1993).

It is respectively submitted that the Examiner has not fully appreciated the very different operation and structure of Ketonen in combination Basile and Baran relative to the present invention as claimed. Although Applicant's claimed invention and those of Ketonen, Basile and Baran are generally directed to radio signal transmission - reception systems, the cited references and Applicant's claimed invention are very different.

It is asserted in the Office Action that Ketonen teaches a method of detecting feeder cable (206) failure which includes an antenna circuitry (212) including: (a) forward signal power detector (404) providing an antenna forward power signal (S1) for signals traveling from the cabinet to the antenna; and (b) an antenna reflected signal power detector (406) providing an antenna reflected power signal (S2) for signals traveling from the antenna to the cabinet. An antenna return loss signal (S3) is proportional to a difference between the antenna forward power

signal and the antenna reflected power signal. A return loss oscillator (410) is configured to modulate the antenna return loss signal (S2), and the oscillator (410) output signal (CW) is coupled to the feeder cable (206). A cabinet circuit (308) is coupled to the feeder cable (206) to recover antenna return loss signal (CW).

In Ketonen the antenna return loss measurement system requires BTS to transmit a TX signal (col. 6, line 15- 23) for return loss circuit (212) to function and provide a back frequency modulated carrier signal (col. 6, lines 37-39). Thus, it is clear from Ketonen that the BTS TX signal must be transmitted from the BTS to a mobile user in order for antenna circuitry (212) to function. If the BTS TX signal ceases to transmit the antenna circuitry (212) stops providing a feedback signal (CW) back to the cabinet circuit (214). Applicant's claimed invention, however, does not require presence of the BTS TX signal for operation per se. Applicant's claimed invention is completely independent from presence or lack of thereof of transmitted or received signals in the operational cellular bands, and thus clearly teaches away from Ketonen.

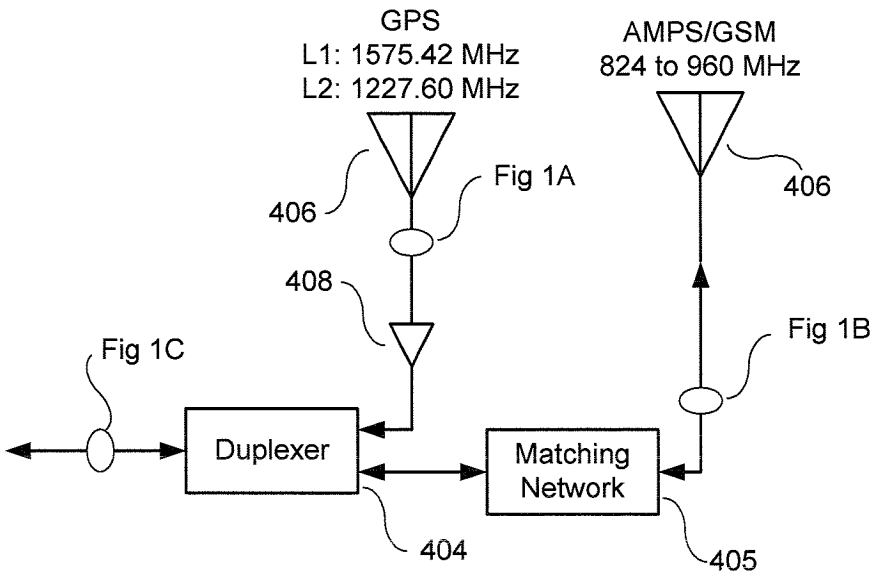
Furthermore, Ketonen teaches that in addition to return loss detector tuning signal S3 which generates a frequency modulated first carrier signal CW1, a cable loss tuning signal S4 can be provided. Cable loss tuning signal S4 is input to VCTCXO (622) that provides a frequency modulated second carrier signal CW2. Therefore Ketonen teaches a plurality of modulated feedback carrier signals for a single TX carrier signal, which is distinguishable from Applicant's claimed invention. Moreover, it is even asserted in the Office Action that:

> [t]he combination of Ketonen and Basile does not teach generating a single modulated signal that combines data signals, producing a single input modulated signal, such that the input signal is adapted to transmitted over a common feeder cable, and transmitting the input modulated signal along with the transmitted

> and received communication channel signals through the common feeder cable".

It is asserted in the Office Action that Basile teaches multiple radiation elements, generating a first signal that combines data signals (see col. 4, lines 19-21, which notes the combining of the GPS and the cellular signals for transmission over a single cable), and receiving an input signal including the first signal from the multiple radiation elements over a common feeder cable, where the data signals include values representing operating parameters of devices at the multiple radiation elements (see Basile, Abstract; col. 4, lines 11-17), and receiving the input signal from the multiple radiation elements over the common feeder cable (see Basile, Abstract; col. 3, lines 51-58). In this regard, Applicant is confused as to why the Examiner insists on interpreting usage of a diplexer (404) which merely combines, but does not modify bi-directional cellular radio signals with GPS signals over the coaxial line (402) for "generating a first signal that combines data signals."

Applicant notes that a conventional duplexer is a three terminal passive device which consists of two bandpass filters each having a common port and having distinctly different bandpass frequencies. In Basile one bandpass frequency covers the cellular band while the second covers the GPS band. In order to facilitate clear understanding of Fig 1 of Basile with frequency band information is included below.



Furthermore, Applicant asserts, as matter of record, that in Basile the GPS antenna (406) receives GPS satellite signals in L1/L2 bands (1227.60 & 1575.42MHz) that are amplified by low noise amplifier (408) that has its output coupled to the first frequency band port of the duplexer (404). The bi-directional cellular or GSM signals are received or transmitted to/from cell antenna (406), which are further coupled through a matching network (405) to the second frequency band port of the duplexer (404). The two signal types – GPS and Cellular telephony occupy two distinct bands:

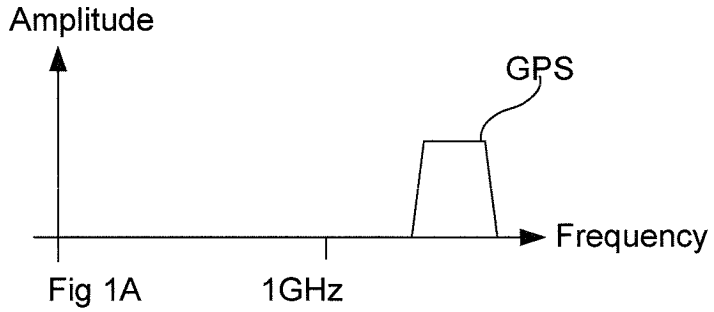


Fig 1A – GPS band signals present at GPS antenna port L1 = 1227.60 & L2 = 1575.42MHz

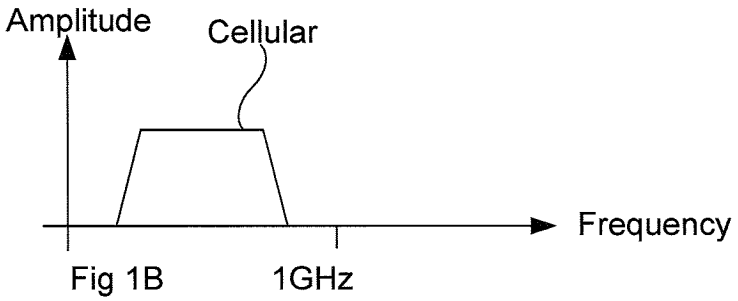


Fig 1B – Cellular band signals present at cellular antenna port (824 – 960MHz)

Applicant notes that duplexer (404) is a device constructed with at least two band pass filters having a common port that allows RF signals having frequencies within specified band pass frequencies to reach a respective frequency port as determined by the band pass characteristics of the filters used in its construction. A duplexer uses high rejection ratio filters to reject signals that may fall outside specified pass bands. As an example, signals transmitted within the cellular band by the cell radio (401) will never reach an output port of the low noise amplifier (408) due to the rejection characteristic inherent in the duplexer. Furthermore, if cell radio (401) is hypothetically modified to be capable of transmitting in both cellular and GPS bands (highly illegal), then a signal transmitted in cell band (824-960MHz) would only reach cell antenna (406) (see Basile, Abstract) and hypothetically 'transmitted' GPS signals (1227.60 & 1575.42MHz) would end up being coupled to the output of the LNA (408).

Therefore if Basile is combined with Ketonen, the singular TX signal transmitted in either band (cellular or GPS) will not generate data signals from multiple radiating locations since it will be blocked by Basile's duplexer from reaching one of the two radiating elements. An ordinary person skilled in the art would have to use a plurality of Ketonen TX carriers which

would result in a plurality of Ketonen CW carrier signals. This is clearly distinguishable from Applicant's claimed invention.

Applicant also points out that the output port of the LNA (408) does not equate to "a radiation element." Coincidently, the coaxial cable between cell radio (401) and duplexer (404) will contain two independent signal groupings having carrier frequencies in both bands, and thus there is no generation of any new signals per se.

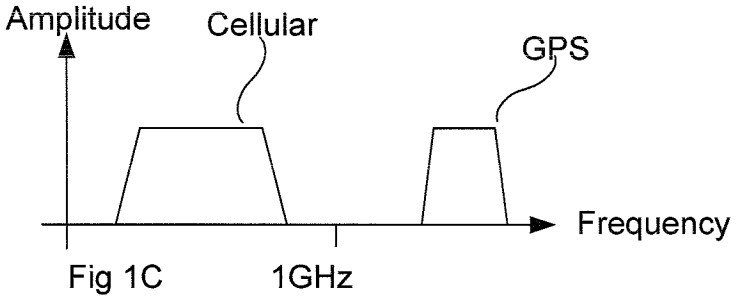


Fig 1C

It is asserted in the Office Action that Baran teaches generating a single modulated signal that combines data signals, producing a single input modulated signal, such that the input signal is adapted to be transmitted over a common feeder cable, and transmitting the input modulated signal along with the transmitted and received communication channel signals through the common feeder cable. A close examination of Baran, however, points to a frequency shifting unit (54) (see Baran, Fig 6 and Col 8, Line 12- 17), which is used for receiving individual 900 MHz packet (46) signals from various cordless devices passed through (36, 36A, 36B and 36C) drop cables. A receiver (104) is tuned to receive 900 MHz packet (46) signals and produces a baseband signal (108), which modulates a UHF transmitter (110) that operates at a 550MHz unused frequency band. Baran reference does not teach, disclose or suggest that a single data modulated carrier signal is transmitted by the UHF transmitter (110), but instead teaches a frequency shifting of received 900 MHz packets (46) to a different frequency band (see Baran, col. 8, lines 53-63) is performed instead. Frequency shifting of 900 MHz packets (46) does not

result in a single modulated signal that combines data signals, and thus is clearly distinguishable from Applicant's claimed invention.

The combination of teachings of Ketonen, Basile and Baran, however, do not teach, disclose or suggest Applicant's: claim 1 limitations of

a) receiving data signals from multiple radiation elements;

> b) generating a single modulated signal that combines data signals; c) producing a single input modulated signal, such that the input signal is adapted to be transmitted over a common feeder cable, wherein the data signals include values representing operating parameters of devices at the multiple radiation elements; d) transmitting the input modulated signal along with transmitted and received communication channel signals through the common feeder cable; e) receiving the input signal from the multiple radiation elements over the common feeder cable; f) extracting the data signals from the input signal; and g) producing a status signal for each device based upon the values representing operating parameters that simulates a feedback signal for the device,

, claim 8 limitations of

> a) receiving data signals that include control signals representing operating parameter settings for devices at multiple radiation elements; b) generating a single modulated signal the combines data signals; c) producing single input modulated signal, to be transmitted over a common feeder cable; d) transmitting input modulated signal along with transmitted and received communication channel signals; (e) receiving the input signal over the common feeder cable; (f) extracting the data signals from the input signal; and (g) producing an output signal for each device that transfers the control signals representing operating parameter settings to the device,

claim 15 limitations of

> a bias tee configured to receive an input signal from the multiple radiation elements over a common feeder cable, wherein the input signal comprises data signals that are received from multiple radiation elements and are combined into a single modulated signal for transmission over the common feeder cable, the data signals including values representing operating

> parameters of devices at the multiple radiation elements; a controller configured to extract the data signals from the input signal and to produce a status signal based upon the values representing operating parameters for the devices; and a load simulator that simulates a feedback signal for the devices in accordance with the status signal,

or claim 17 limitations of

> a bias tee configured to receive an input signal over a common cable, wherein the input signal comprises a single modulated signal that is a combination of data signals that include control signals representing operating parameter settings for devices at multiple radiation elements; and a controller configured to extract the data signals and to produce an output signal for each device that transfers the control signals representing operating parameter settings to the device.

Indeed, if teachings of Basile and Baran are combined with those of Ketonen, the result would be that multiple feed lines from the antennas would still be required, and the problem of distinguishing failure of each device separately would exist, and the principle of operation of Ketonen would be changed (see MPEP 2143.01 VI, "[i]f the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959)).

Further, the assertions made in the Office Action on pages 3-5 that lead to a conclusion of obviousness are not explicit and the basic requirements of an *articulated rationale* under MPEP 2143 cannot be found. Additionally, since neither Ketonen, Basile, Baran, and therefore, nor the *combination of the three*, teach, disclose or suggest all the limitations of Applicant's claims 1, 8, 15 and 17, as listed above, Applicant's claims 1, 8, 15 and 17 are not obvious over Ketonen in view of Basile and Baran since a *prima facie* case of obviousness has not been met under MPEP §2142. Thus, claims 1, 8, 15 and 17 of the present application are patentable over Ketonen in view of Basile and Baran for at least the reasons set forth above. Additionally, the claims that

directly or indirectly depend on claims 1 and 8, namely claims 2-4, and 9-10, respectively, are also patentable over Ketonen in view of Basile and Baran for at least the same reasons.

Accordingly, withdrawal of the rejection of claims 1-4, 8-10, 15 and 17 is respectfully requested.

CONCLUSION

In view of the foregoing amendments and remarks, Applicants believe that the claims are in condition for allowance. Reconsideration, re-examination, and allowance of all claims are respectfully requested. If the Examiner feels that a telephone interview may help further the examination of the present application, the Examiner is encouraged to call the undersigned attorney or his associates at the telephone number listed below.

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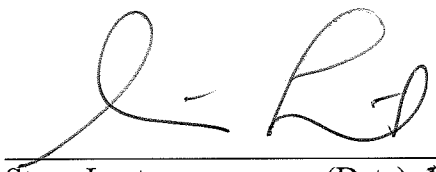
Respectfully submitted,



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